

Claims

- [c1] I claim as my invention:
1. A golf ball comprising:
a core; and
a cover formed over the core, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one polyurethane prepolymer and a curative blend comprising N,N"-dialkylamino-diphenyl-methane and a second curing agent;
wherein the cover has an aerodynamic surface geometry thereon.
- [c2] 2.The golf ball according to claim 1 further comprising at least one boundary layer disposed between the core and the cover.
- [c3] 3. The golf ball according to claim 1 wherein the polyurethane prepolymer is a polypropylene glycol terminated toluene diisocyanate prepolymer with a nitrogen-carbon-oxygen content ranging from 3.0% to 6.0%.
- [c4] 4. The golf ball according to claim 2 wherein the boundary layer is composed of a blend of ionomers.
- [c5] 5. The golf ball according to claim 1 wherein the polyurethane prepolymer is a polytetramethylene ether glycol terminated toluene diisocyanate prepolymer with a nitrogen-carbon-oxygen content ranging from 3.75% to 7.0%.
- [c6] 6.A golf ball comprising:
a core comprising a polybutadiene mixture;
a boundary layer formed over the core; and
a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one polyurethane prepolymer and a curative blend comprising N,N"-dialkylamino-diphenyl-methane in an amount of 25 to 75 parts per one hundred parts of the curative blend and 4,4"-methylenebis-(2,6-diethyl)-aniline in an amount of 25 to 75 parts per one hundred parts of the curative blend;
wherein the cover has an aerodynamic surface geometry thereon.
- [c7] 7.A golf ball comprising:

a core; and
a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising polytetramethylene ether glycol terminated toluene diisocyanate prepolymer and a curative blend comprising N,N"-dialkylamino-diphenyl-methane in an amount of 25 to 75 parts per one hundred parts of the curative blend and 4,4"-methylenebis-(2,6-diethyl)-aniline in an amount of 25 to 75 parts per one hundred parts of the curative blend;
wherein the cover has an aerodynamic surface geometry thereon.

[c8]

8.A golf ball comprising:
a solid core comprising a polybutadiene mixture;
a boundary layer formed over the core, the boundary layer comprising a blend of ionomer materials; and
a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising polytetramethylene ether glycol terminated toluene diisocyanate prepolymer and a curative blend comprising N,N"-dialkylamino-diphenyl-methane in an amount of 25 to 75 parts per one hundred parts of the curative blend and 4,4"-methylenebis-(2,6-diethyl)-aniline in an amount of 25 to 75 parts per one hundred parts of the curative blend;
wherein the cover has an aerodynamic surface geometry thereon.

[c9]

9.The golf ball according to claim 8 wherein the blend of ionomer materials of the boundary layer is composed of a sodium neutralized copolymer of ethylene and methacrylic acid, a zinc neutralized copolymer of ethylene and methacrylic acid and a magnesium neutralized terpolymer of ethylene, methacrylic acid and n-butyl acrylate.

[c10]

10.A golf ball comprising:
a core comprising a polybutadiene mixture, the core having a diameter ranging from 1.35 inches to 1.64 inches and having a PGA compression ranging from 50 to 90;
a boundary layer formed over the core, the boundary layer composed of a blend

of ionomer materials, the boundary layer having a thickness ranging from 0.020 inch to 0.075 inch, the blend of ionomer materials having a Shore D hardness ranging from 50 to 75 as measured according to ASTM-D2240; and a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising polytetramethylene ether glycol terminated toluene diisocyanate prepolymer and a curative blend comprising N,N"-dialkylamino-diphenyl-methane in an amount of 25 to 75 parts per one hundred parts of the curative blend and 4,4"-methylenebis-(2,6-diethyl)-aniline in an amount of 25 to 75 parts per one hundred parts of the curative blend, wherein the thermosetting polyurethane material has a Shore D hardness ranging from 30 to 60 as measured according to ASTM-D2240, a thickness ranging from 0.015 inch to 0.044 inch, and an aerodynamic surface geometry thereon.

[c11]

11.A method for forming a cover for a golf ball, the method comprising: blending N,N"-dialkylamino-diphenyl-methane in an amount of 25 to 75 parts per one hundred parts of a curative blend and 4,4"-methylenebis-(2,6-diethyl)-aniline in an amount of 25 to 75 parts per one hundred parts of the curative blend to form the curative blend; mixing the curative blend with a polyurethane prepolymer in a mixing chamber to create pre-polyurethane mixture; dispensing the pre-polyurethane mixture into a first hemispherical cavity and a second hemispherical cavity; placing a golf ball precursor product into the first hemispherical cavity with the pre-polyurethane mixture therein; mating the first hemispherical cavity with the second hemispherical cavity; and curing the pre-polyurethane mixture to create a polyurethane cover on the golf ball precursor product.

[c12]

12.A golf ball comprising: a core; and a cover formed over the core, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one polyurethane prepolymer and a curative blend comprising a first curing agent in

[illegible]